



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

**NOTICE OF ALLOWANCE AND ISSUE FEE DUE**

HM12/0529

ASHOK K SHUKLA  
10423 POPKINS COURT  
WOODSTOCK MD 21163

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP/ART UNIT	DATE MAILED
09/696,897	10/26/00	017	KATCHERES, K	1636 05/29/01
First Named Applicant	SHUKLA, 35 USC 154(b) term ext. = 0 Days.			

TITLE OF INVENTION MUCIN-BIOMOLECULES COMPLEX FOR TRANSFECTION

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
1	530-395.000	687	UTILITY	YES	\$620.00	08/29/01

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

**PATENT AND TRADEMARK OFFICE COPY**

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# Notice of Allowability

Application No.

09/696,897

Examiner

Konstantina Katcheves

Applicant(s)

SHUKLA ET AL.

Art Unit

1636

-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's amendments, Paper No. 6.
2. ☒ The allowed claim(s) is/are 1-12 and 14-19.
3. ☒ The drawings filed on 26 October 2000 are acceptable as formal drawings.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE FOR SUBMITTING NEW FORMAL DRAWINGS, OR A SUBSTITUTE OATH OR DECLARATION.** This three-month period for complying with the REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL is extendable under 37 CFR 1.136(a).

6. ☒ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
7. ☐ Applicant MUST submit NEW FORMAL DRAWINGS
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No. \_\_\_\_\_.
  - (b) ☐ including changes required by the proposed drawing correction filed \_\_\_\_\_, which has been approved by the examiner.
  - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE / SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

## Attachment(s)

- |  |   |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892)  | 2 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 4 <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No. <u>7</u> |
| 5 <input type="checkbox"/> Information Disclosure Statements (PTO-1449), Paper No. _____               | 6 <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 7 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9 <input type="checkbox"/> Other  |

#9/B

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with inventor, Ashok K. Shukla, Ph.D., D.Sc. on 17 May 2001.

The application has been amended as follows:

Claims ~~13~~ and ~~20~~ have been cancelled.

B1

1. (twice amended) A mucin-DNA (deoxyribonucleic acid) complex formed by combining mucin and DNA wherein the complex is capable of [for the] transport [of said mucin-DNA complex] into a cell.

2. (twice amended) A mucin-biomolecules complex formed by combining mucin and biomolecules wherein the complex is capable of [for the] transport [of said mucin-biomolecules complex] into a cell.

3. (twice amended) The [A] mucin-DNA complex of claim 1, where said mucin is selected from the group consisting of mucin from a biological source, [;] mucin from a non-biological source[;] and combinations thereof.

17

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B1  
Ans

4. (twice amended) The [A] mucin-DNA complex of [as in] claim 1, where said mucin is selected from the group consisting of mucin in its native state<sub>1</sub>[;] biologically modified mucin<sub>1</sub>[;] chemically modified mucin<sub>1</sub>[;] mucin modified by enzymes<sub>1</sub>[;] mucin modified by heat-based methods<sub>1</sub>[;]and[, ] combinations thereof.

Claims 5, 7 and 12 (twice amended) the phrase "A mucin-DNA complex as in claim 1" has been replaced with the phrase --The mucin-DNA complex of claim 1--.

B2

6. (twice amended) The [A] mucin-DNA complex of [as in]claim 1, where said DNA is selected from the group consisting of DNA in its natural state<sub>1</sub>[;] modified DNA<sub>1</sub>[;] synthetically created DNA<sub>1</sub>[;] linear DNA<sub>1</sub>[;] circular DNA<sub>1</sub>[;] single-stranded DNA<sub>1</sub>[;] double-stranded DNA<sub>1</sub>[;] and[, ] combinations thereof.

B3

11  
8. (twice amended) The [A] mucin-biomolecules complex of [as in]claim 2, where said biomolecules is selected from the group consisting of biomolecules in its natural state<sub>1</sub>[;] modified biomolecules<sub>1</sub>[;] synthetically created biomolecules<sub>1</sub>[;] and[, ] combinations thereof.

Claim 9(twice amended), the phrase "A mucin-DNA complex as in claim 1" has been replaced with the phrase --The mucin-DNA complex of claim 1--. The term "methods, and," has been replaced with --methods and--.

B4 811. (twice amended) The [A] mucin-DNA complex of [as in] claim 1, where said mucin in said complex is modified [can undergo modifications including] by the addition, removal or alteration of a [the] carbohydrate or a protein component [components] of [comprising] said mucin.

Claim 14, 15, 16, 17 and 19 (twice amended), "A mucin-biomolecule complex as in claim 2" has been replaced with the phrase --The mucin-DNA complex of claim 2--.

B5 16 148. (twice amended) The [A] mucin-biomolecules complex of [as in] claim 2, where said complex [can undergo modification including] the addition, removal or alteration of a [the] carbohydrate or a protein component [components] of [comprising] said mucin.

*Allowable Subject Matter*

The following is an examiner's statement of reasons for allowance: Applicant's invention is free of the prior art. The closest prior art teaches mucin antigens that mediate DNA uptake by endocytosis. However, the prior art relates to cells surface mucin and does not disclose mucin as a DNA or biomolecule delivery vehicle in itself.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Art Unit: 1636

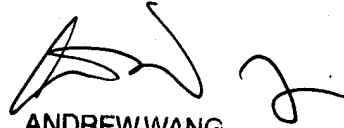
*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Konstantina Katcheves whose telephone number is (703) 305-1999. The examiner can normally be reached on Monday through Friday 7:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John LeGuyader can be reached on (703) 308-0447. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3014 for regular communications and (703) 305-7939 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the patent analyst, Dianiece Jacobs, whose telephone number is (703) 305-3388.

Konstantina Katcheves  
May 18, 2001

  
ANDREW WANG  
PATENT EXAMINER  
TL 1600

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